

PERFORMANCE AUDIT  
OF THE  
FOREST MANAGEMENT DIVISION  
DEPARTMENT OF NATURAL RESOURCES

October 2001

## EXECUTIVE DIGEST

# FOREST MANAGEMENT DIVISION

INTRODUCTION	This report, issued in October 2001, contains the results of our performance audit* of the Forest Management Division (FMD), Department of Natural Resources.
AUDIT PURPOSE	This performance audit was conducted as part of the constitutional responsibility of the Office of the Auditor General. Performance audits are conducted on a priority basis related to the potential for improving effectiveness* and efficiency*.
BACKGROUND	<p>FMD's stated mission* is to provide for the protection, integrated management, and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the people of the State. FMD accomplishes its mission through the activities of its five organizational sections located in Lansing (State Forest Operations, Forest Resource Protection, Recreation and Trails, Cooperative Resource Programs, and Program Services) and field operations.</p> <p>For the fiscal year ended September 30, 2000, FMD expenditures totaled approximately \$44.4 million. As of March 31, 2001, FMD had 332 full-time employees.</p>

\* See glossary at end of report for definition.

AUDIT OBJECTIVES, CONCLUSIONS, AND NOTEWORTHY ACCOMPLISHMENTS	<p><b>Audit Objective:</b> To assess the effectiveness and efficiency of FMD's timber and forestry activities.</p> <p><b>Conclusion:</b> Based on our analysis of available data, it appeared that FMD's timber and forestry activities were efficient. However, it was not clear whether timber and forestry activities were effective because there were not clear, unified, and measurable program goals* and objectives* (Finding 1). We also noted reportable conditions* related to the updating of the operations inventory* database and liability insurance (Findings 2 and 3).</p> <p><b>Noteworthy Accomplishments:</b> FMD developed the Integrated Forest Monitoring, Assessment and Prescription (IFMAP) System, a forest resources inventory system that addresses all lands in Michigan. Decisions once made only within the context of State land will now be made in concert with other land management agencies and the public. In addition to the Statewide forest inventory, the IFMAP System is redesigning the resources inventory process for State-owned lands.</p> <p><b>Audit Objective:</b> To assess the effectiveness and efficiency of FMD's forest resource protection activities.</p> <p><b>Conclusion:</b> Our assessment disclosed that FMD's forest resource protection activities were generally effective and efficient. However, we noted reportable conditions related to program goals and objectives, fire suppression training, and forest fire suppression costs (Findings 1, 4, and 5).</p>
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\* See glossary at end of report for definition.

**Noteworthy Accomplishments:** The U.S. Forest Service recognized FMD in 1999 and 2000 for excellent cooperation in supporting the national fire suppression effort. Suppression resources were dispatched to 13 different states. The State of Montana also recognized Michigan's efforts in assisting Montana in suppressing the fires impacting its forests. FMD sent 82 firefighters and foresters to other states for 1,591 days during fiscal years 1999-2000 and 1998-99 to assist fighting large national forest fires. The U.S. Forest Service reimburses the State for all labor and subsistent costs. FMD recognizes the training value that its employees receive assisting in the suppression of these fires.

**Audit Objective:** To assess the effectiveness and efficiency of FMD's recreation and trails programs.

**Conclusion:** **FMD's recreation and trails programs were generally effective and efficient.** However, we noted reportable conditions related to program goals and objectives and State forest campgrounds (Findings 1 and 6).

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**AUDIT SCOPE AND  
METHODOLOGY**

Our audit scope was to examine the program and other records of the Forest Management Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Our methodology included examination of FMD records and activities primarily for the period October 1, 1998 through March 31, 2001. We conducted a preliminary review of FMD's operations to gain an understanding of its activities. We analyzed how FMD determined if it accomplished its mission and if the State Forest Operations, Forest Resource Protection, and Recreation

and Trails Sections met their goals and objectives. We tested FMD's timber sale activities and examined stand\* and compartment\* prescriptions\*. Also, we analyzed forest fire data and tested fire reports and supporting documentation to determine whether responsible parties were billed for fire suppression costs. Further, we evaluated the development of the trail network plans and FMD maintenance of the snowmobile and off-road vehicle trails.

In addition, we surveyed interest groups, including requesting input from timber harvesters regarding their association with FMD (see supplemental information).

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**AGENCY RESPONSES  
AND PRIOR AUDIT  
FOLLOW-UP**

Our audit report includes 6 findings and 8 corresponding recommendations. The preliminary response prepared by the Department of Natural Resources indicates that it agrees with the recommendations.

FMD had complied with 6 of the 7 prior audit recommendations. One recommendation was rewritten for inclusion in this report.

\* See glossary at end of report for definition.

October 22, 2001

Mr. Keith J. Charters, Chairperson  
Natural Resources Commission  
and  
Mr. K. L. Cool, Director  
Department of Natural Resources  
Stevens T. Mason Building  
Lansing, Michigan

Dear Mr. Charters and Mr. Cool:

This is our report on the performance audit of the Forest Management Division, Department of Natural Resources.

This report contains our executive digest; description of agency; audit objectives, scope, and methodology and agency responses and prior audit follow-up; background; comments, findings, recommendations, and agency preliminary responses; description of survey, summary of survey responses, map of State forest by management unit, and summary of forest management units' selected activities and expenditures, presented as supplemental information; and a glossary of acronyms and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Thomas H. McTavish, C.P.A.  
Auditor General

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## Description of Agency

The Forest Management Division (FMD), Department of Natural Resources, is responsible for managing the 3.9 million acres of State forest lands, providing forest fire protection and control for 20 million acres of forest and wild lands, administering forest insect and disease control programs, providing opportunities and leadership in developing dispersed recreation resources, managing the 1,700 miles of State designated natural rivers and their associated public and private lands, coordinating State resource and land management of the 1,089 miles of federal wild and scenic river corridors, and providing assistance to private forest landowners and associated industries that affect forest resources.

FMD's stated mission is to provide for the protection, integrated management, and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the people of the State.

FMD is led by a management team under the direction of the division chief. The team consists of the division chief, five organizational sections located in Lansing (State Forest Operations, Forest Resource Protection, Recreation and Trails, Cooperative Resource Programs, and Program Services), and one field coordinator who coordinates the field operation activities. Following is the description of the responsibilities of each of the five sections:

1. The State Forest Operations Section's responsibilities include timber harvest and reforestation programs. The timber harvest program generated approximately \$26.1 million of revenue in fiscal year 1999-2000. This amount is not expended in the fiscal year earned; it is deposited into the Forest Development Fund.
2. The Forest Resource Protection Section is responsible for forest fire protection and the forest fire experiment station. Forest fire protection includes both State and privately owned forest lands. Fire protection is accomplished by a network of several fire offices located Statewide. The forest fire experiment station designs and fabricates firefighting equipment not available commercially.
3. The Recreation and Trails Section is responsible for the State forest campgrounds and the snowmobile, off-road vehicle, and nonmotorized trails programs. The Section coordinates the development and maintenance of the various types of trails

within the State. This Section is responsible for administering the snowmobile and off-road vehicle trails maintenance grant program.

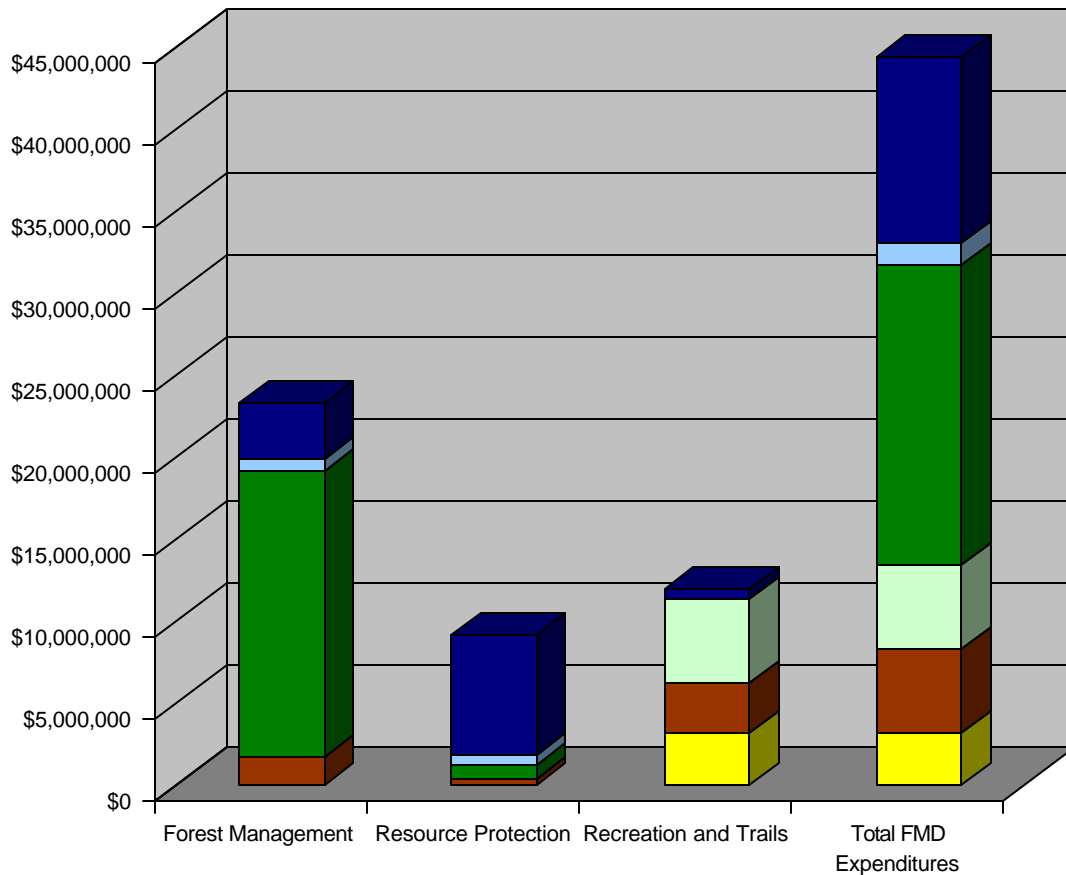
4. The Cooperative Resource Programs Section assists private forest landowners, industry, cities, schools, and local units of government to help them make wise use of their forest and to administer forest tax acts available to private owners. Also, the Section provides economic development efforts that focus on forest products. These efforts include technical expertise to improve efficiency and expansion of markets of existing and new wood product manufacturers.
5. The Program Services Section directs and coordinates personnel and management-related matters, training and career development, fiscal control, preparation of budget and program requests, program evaluation, and office management and related administrative functions.

Field operations are coordinated by a field coordinator. Field operations are further subdivided into 15 forest management units, field offices, and repair shops. Each of the forest management units consists of several foresters and several firefighters. The firefighters, when not performing firefighter duties, are responsible for recreation and trail activities, such as inspecting trails and campgrounds. Foresters help fight fires when needed. (A map of State forest by management unit and a summary of forest management units' selected activities and expenditures are presented as supplemental information.)

For the fiscal year ended September 30, 2000, FMD expenditures totaled approximately \$44.4 million. As of March 31, 2001, FMD had 332 full-time employees. The following

graph shows the FMD programs and the program expenditures by funding source for fiscal year 1999-2000:

FOREST MANAGEMENT DIVISION  
Department of Natural Resources  
Program Expenditures by Funding Source  
Fiscal Year 1999-2000



	Forest Management	Resource Protection	Recreation and Trails	Total FMD Expenditures
General Fund	\$ 3,411,133	\$ 7,304,329	\$ 609,917	\$ 11,325,380
Federal Funds	646,414	655,536		1,301,950
Timber Harvest	17,442,058	867,245		18,309,303
Snowmobile and Off-Road Vehicle Registration and Trail Fees			5,052,956	5,052,956
Other Funds	1,742,714	335,866	3,115,537	5,194,116
Marine Safety Funds			3,173,696	3,173,696
Totals	<u>\$ 23,242,319</u>	<u>\$ 9,162,976</u>	<u>\$ 11,952,105</u>	<u>\$ 44,357,400</u>

## Audit Objectives, Scope, and Methodology and Agency Responses and Prior Audit Follow-Up

### Audit Objectives

Our performance audit of the Forest Management Division (FMD), Department of Natural Resources (DNR), had the following objectives:

1. To assess the effectiveness and efficiency of FMD's timber and forestry activities.
2. To assess the effectiveness and efficiency of FMD's forest resource protection activities.
3. To assess the effectiveness and efficiency of FMD's recreation and trails programs.

### Audit Scope

Our audit scope was to examine the program and other records of the Forest Management Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

### Audit Methodology

Our audit procedures, conducted from September 2000 through April 2001, included examination of FMD records and activities primarily for the period October 1, 1998 through March 31, 2001.

Our methodology included conducting a preliminary review of FMD's operations to gain an understanding of its activities. This included interviewing FMD personnel and identifying performance measures and performance objectives that FMD uses to evaluate its effectiveness and efficiency. Also, we reviewed applicable laws and regulations, management plans, and policies and procedures to gain an understanding of internal control related to pertinent FMD functions. We visited one forest compartment open house and compartment review to gain an understanding of, observe, and analyze FMD's operations. In addition, we made field visits to four forest management units and observed timber harvesting and operations inventory activities. We surveyed interest groups to obtain their input on whether FMD programs are adequately addressing the needs and concerns of users and the environment. We

used this information to perform a risk assessment in order to determine which areas to emphasize in our audit and the extent of our detailed analysis and testing.

To accomplish our first objective, we compared current timber harvesting and tree planting activities with the State's forest plan to determine whether current activities were in accordance with the plan and resulted in optimum use of State forest resources. We reviewed FMD's mission and the State Forest Operations Section goals and objectives. We analyzed how FMD determined if it accomplished its mission and if the Section met its goals and objectives. We tested FMD's timber sale activities to determine if those activities were consistent with timber sale policies and procedures. We examined stand and compartment prescriptions to assess whether FMD has been prescribing logical forest management activities. We determined if FMD adequately monitors timber cuts to ensure compliance with timber sale contracts. We surveyed timber harvesters, requesting input regarding their association with FMD (see supplemental information).

To accomplish our second objective, we analyzed the forest fire data. We reviewed FMD's mission and the Forest Resource Protection Section goals and objectives. We analyzed how FMD determined if it accomplished its mission and if the Section met its goals and objectives. We tested fire reports and supporting documentation to determine whether parties causing forest fires were billed for fire suppression costs and whether payments to individuals assisting with fire suppression were documented on fire reports. We evaluated FMD's fire suppression and control activities to determine if they were reasonable.

To accomplish our third objective, we evaluated the development of the trail network plans to determine if the development process considers factors such as usage, user input, etc. We reviewed FMD's mission and the Recreation and Trails Section goals and objectives. We analyzed how FMD determined if it accomplished its mission and if the Section met its goals and objectives. We reviewed FMD's maintenance programs to determine if snowmobile and off-road vehicle trails are adequately maintained. To evaluate the effectiveness of the snowmobile and off-road vehicle trail grooming program, we reviewed grooming contracts with snowmobile clubs for contract compliance and FMD monitoring. To evaluate the efficiency of the State's trails grooming program, we analyzed the snowmobile trail grooming costs under contract and FMD's trail grooming costs.

### Agency Responses and Prior Audit Follow-Up

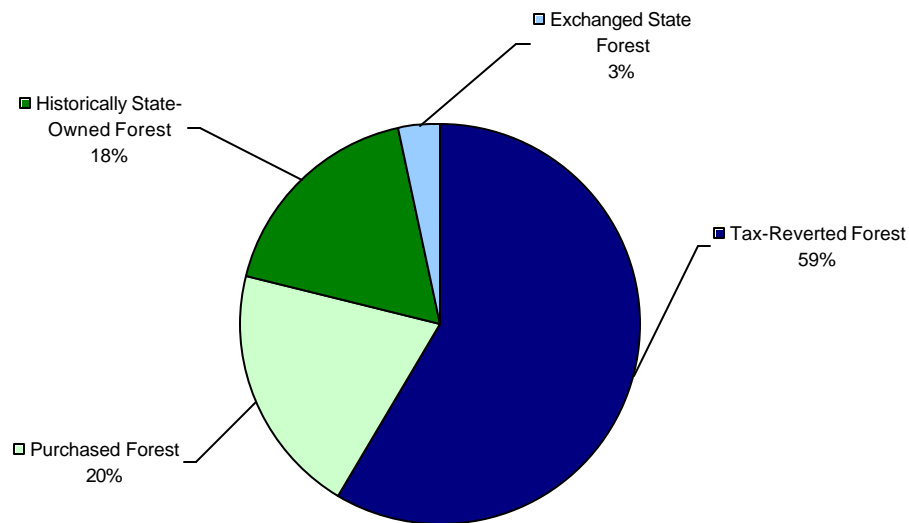
Our audit report includes 6 findings and 8 corresponding recommendations. The preliminary response prepared by DNR indicates that it agrees with the recommendations.

The agency preliminary response which follows each recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and Department of Management and Budget Administrative Guide procedure 1280.02 require DNR to develop a formal response to our audit findings and recommendations within 60 days after release of the audit report.

FMD had complied with 6 of the 7 prior audit recommendations. One recommendation was rewritten for inclusion in this report.

## Background

Michigan was organized as a territory in 1805. Although Michigan became a State in 1837, it was not until 1899 that the first Forestry Commission was created. Within 60 years after Michigan became a State, the forest of primarily white pine had been harvested. After loggers had harvested most of the State's timber, it was common practice for them to not pay property taxes. When property owners failed to pay property taxes and the local government was unable to sell the property, the land reverted to the State. The following chart shows how Michigan obtained its State forest:



In 1922, the Department inventoried the northern counties. It was the first attempt to conduct a thorough study of the potential uses and designations of wild land areas.

Some State leaders had set up plans for reforestation of those lands long before most of them reverted to State ownership. The State began hand-planting trees by the millions. For every acre reforested, however, many more acres reverted to the State, so that the acreage of abandoned, deforested, and idle land continued to increase year after year.



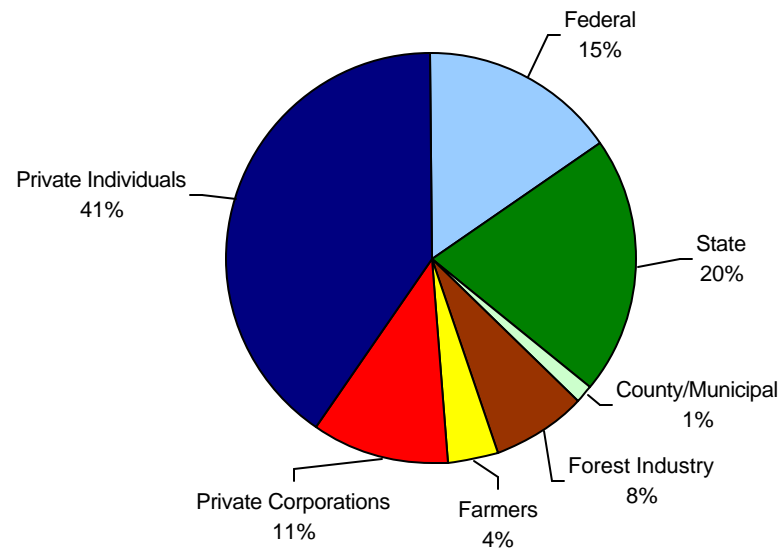
The State determined that the land could not be made permanently productive in private ownership but could be made useful as wild land if kept in public ownership and developed properly. The Department established game refuges and public hunting grounds, improved trout streams, and sought to develop these lands for recreation.

A new forest has virtually replaced the millions of acres that had been barren after the loggers harvested the forest. Today, a healthy, growing forest of more than 19.7 million acres (53% of the State's total land area) provides wildlife habitat, beauty, recreation, and forest products industry.

Michigan's 19.7 million timberland acres reflect both a wide array of owners as well as a wide diversity of ownership objectives and desires for their property. Private owners control 64% of the State's timberland. Nonindustrial private ownership (private individuals, corporations, and farmers) is 56% of the total. Forest industry ownership is 8% of the State total. These collective private holdings have ownership objectives ranging from economic to purely aesthetic values. They generally have a strong land ethic and respond fairly well to opportunities to improve their properties' values.

Public ownership accounts for the remaining 36% of the total timberland base. Federal forests in Michigan collectively represent 15% of the total. The State forests represent 20% of the total. One percent of public ownership is held by counties and municipalities. Principal ownership objectives of public lands include community stability through support for timber and recreational industries as well as the more naturalistic values associated with wilderness settings.

The following chart shows the ownership of Michigan's forests:



# COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

## TIMBER AND FORESTRY

### COMMENT

**Audit Objective:** To assess the effectiveness and efficiency of the Forest Management Division's (FMD's) timber and forestry activities.

**Conclusion:** Based on our analysis of available data, it appeared that FMD's timber and forestry activities were efficient. However, it was not clear whether timber and forestry activities were effective because there were not clear, unified, and measurable program goals and objectives. We also noted reportable conditions related to the updating of the operations inventory database and liability insurance.

**Noteworthy Accomplishments:** FMD developed the Integrated Forest Monitoring, Assessment and Prescription (IFMAP) System, a forest resources inventory system that addresses all lands in Michigan. Decisions once made only within the context of State land will now be made in concert with other land management agencies and the public. In addition to the Statewide forest inventory, the IFMAP System is redesigning the resources inventory process for State-owned lands.

### FINDING

#### 1. Program Goals and Objectives

The Department of Natural Resources (DNR) should establish clear, unified, and measurable goals and objectives and a related information gathering system for its timber and forestry program.

FMD's stated mission is to provide for the protection, integrated management, and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the people of the State.

FMD has developed some goals, objectives, and activities to help ensure that its mission is achieved. For example, one measurable goal of FMD was to keep 93%

of all wildfires to less than 10 acres. Another one of FMD's goals for fiscal year 1999-2000 was to lead in sustaining and improving the health, diversity, and productivity of forest resources and values across all ownerships. An objective related to this goal was to maintain and improve a high quality, nationally recognized forest recreation program that meets the needs of recreationists, provides growth to State and local economies, and safeguards the environment. FMD activities to fulfill this goal and objective included conducting a dispersed recreation assessment, developing an appropriate database, and integrating into the recreation management plan.

The Legislature has also established a goal for FMD. The annual appropriations acts for fiscal years 1999-2000 and 1998-99 state that DNR shall not allow the amount of timber marked for harvest to decrease below 855,000 cords, provided that DNR takes into consideration the impact of timber harvesting on wildlife habitat and recreation uses. Although FMD's stated mission, goals, and objectives do not relate directly to this output\* measure, pursuit of FMD goals would generally result in planned harvests of significantly less than the 855,000 cords annually. For example, FMD documented that it marked 761,987 and 634,253 and its contractors harvested 776,006 and 685,494 cords of timber for fiscal years 1999-2000 and 1998-99, respectively. FMD informed us that it believed that it met the appropriations acts' mandates because it interpreted the appropriations acts to mean the total quantity of timber marked, but not yet harvested. Timber sales contracts are frequently for 2-year to 3-year periods, with an option to extend. As a result, the volume of unharvested marked timber at any point in time is greater than the amount marked each year.

Executive Directive No. 2001-3 (rescinded Executive Directive No. 1996-1) states that it is the policy of the administration to ensure excellence and continuous improvement in the quality of services that State government provides to Michigan citizens. We conclude that necessary components of an excellence and continuous improvement process are the establishment of measurable goals and objectives and the collection of pertinent data to assess the attainment of those goals and objectives.

FMD maintains information related to outputs for some of its activities, such as the amount of timber prepared for sale and amount of timber harvested. This provides

\* See glossary at end of report for definition.

FMD with general feedback on the achievement of its mission, even though these output measures do not directly relate to its stated goals and objectives. Generally, FMD had not developed measurable goals and objectives. Therefore, FMD could not assess whether it had attained its mission, goals, and objectives.

Without measurable program goals and objectives, FMD and other interested parties cannot assess whether its efforts are achieving planned and desirable results.

### **RECOMMENDATION**

We recommend that DNR establish clear, unified, and measurable goals and objectives and a related information gathering system for its timber and forestry program.

### **AGENCY PRELIMINARY RESPONSE**

DNR agrees with the recommendation and informed us that State forest lands are managed scientifically. Current practices have the Forest, Mineral, and Fire Management Division (formerly FMD) reviewing one tenth of the State forest lands (approximately 390,000 acres) annually and developing scientific prescriptions. These prescriptions are developed to incorporate multiple-use objectives that include forest health, recreational opportunities, commercial opportunities, environmental impacts, public health and safety, etc. Many of the uses directly conflict with each other. Because of this complexity, it is very difficult to develop goals and objectives as defined by the auditors.

DNR also informed us that discussion by the Division management team has led to the development of the following goal: "To complete 85 percent (or more) of the annual state forest prescriptions as documented through the compartment review process." Annual prescriptions are well defined, relatively specific, and measurable to determine achievement. They encompass the scope of State forest management practices and should achieve the intent of the auditors' recommendation.

## **FINDING**

### **2. Updating of Operations Inventory Database**

The operations inventory database was not updated in a timely manner after silvicultural\* activities had been conducted on a forest area.

When FMD conducts its operation inventory on a selected forest area each year, it identifies areas needing management treatment. The treatment may include clear cutting or thinning timber stands for silvicultural treatment. These management activities can occur any time from a few months to several years after the inventory is conducted.

FMD personnel informed us that they informally request the forest management units to update the information in the database monthly, quarterly, or at the most every 10 years, when the next operations inventory is due.

We tested 15 compartments, which consisted of 1,063 timber stands. Our test disclosed that the operations inventory data for 3 of the 15 compartments had not been updated as of March 2, 2001, ranging from 61 to 245 days after management treatment was conducted.

Because timely updates of timber stand data were not made when stand conditions changed, management did not have assurance that the decisions it made regarding managing the State forest system were based on current data.

## **RECOMMENDATION**

We recommend that the operations inventory database be updated in a timely manner after silvicultural activities have been conducted on a forest area.

## **AGENCY PRELIMINARY RESPONSE**

The Forest, Mineral, and Fire Management Division agrees with this recommendation and will work to meet its intent.

\* See glossary at end of report for definition.

## **FINDING**

### **3. Liability Insurance**

FMD timber sale contracts did not require that timber harvesters maintain liability insurance.

FMD issued 2,088 timber sale contracts from October 1, 1997 through September 20, 2000 with private timber harvesters to harvest timber in State forests. FMD did not require timber harvesters to have liability insurance. As a result, a potential exists that a third party (a public user of the forest) could be injured on a State timber harvest site and bring a lawsuit against the State.

FMD informed us that it has not had any actual liability settlements. However, the increasing public use of the State forest causes the increase of potential liability. Other similar DNR contracts, such as snowmobile trail groomers, do require liability insurance. Requiring timber harvesters to have liability insurance would minimize the amount of risk and liability to the State.

## **RECOMMENDATION**

We recommend that FMD consider requiring timber harvesters to maintain liability insurance.

## **AGENCY PRELIMINARY RESPONSE**

DNR agrees with the recommendation and is working to implement it.

# **RESOURCE PROTECTION**

## **COMMENT**

**Background:** The fire protection program activity includes fire prevention and fire suppression on State and privately owned forest lands, fire management planning, prescribed burning, equipment and facilities maintenance and readiness, and federal excess property acquisition for State and local fire department use.

The forest fire experiment station designs, develops, and tests various kinds of equipment to meet the needs of the State's complex fire program. Testing of commercially available equipment is done to determine its effectiveness, safety, and durability in forest fire suppression.

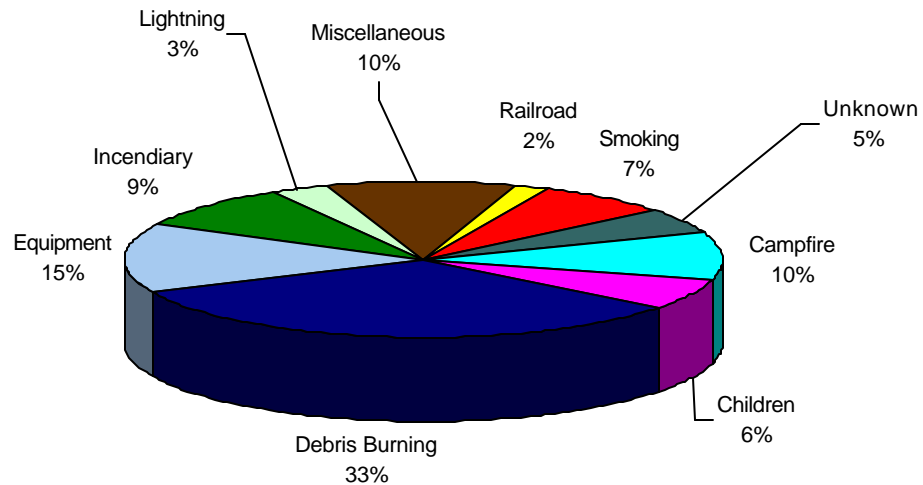
The majority of forest fires occur during April, May, and June with minor occurrences the rest of the summer and fall. Aircraft are used for fire detection purposes. These detection aircraft provide early warning of fires and an accurate description of fire location and behavior. This offers an additional measure of safety to the firefighters on the ground.

During calendar year 2000, FMD responded to 573 forest fires that burned 4,640 acres, or an average of 8.1 acres per fire. During calendar year 1999, FMD responded to 664 fires that burned 9,180 acres, or an average of 13.8 acres per fire. That was the first year in which the average fire size was over 10 acres since 1990. FMD informed us that 1999 and 2000 were two of the worst fire seasons on record because of drought-like conditions. During calendar year 1999, there were two large fires, one in excess of 5,000 acres and the other in excess of 800 acres, that skewed the average fire size. These two fires represented over 60% of the acres burned in 1999.

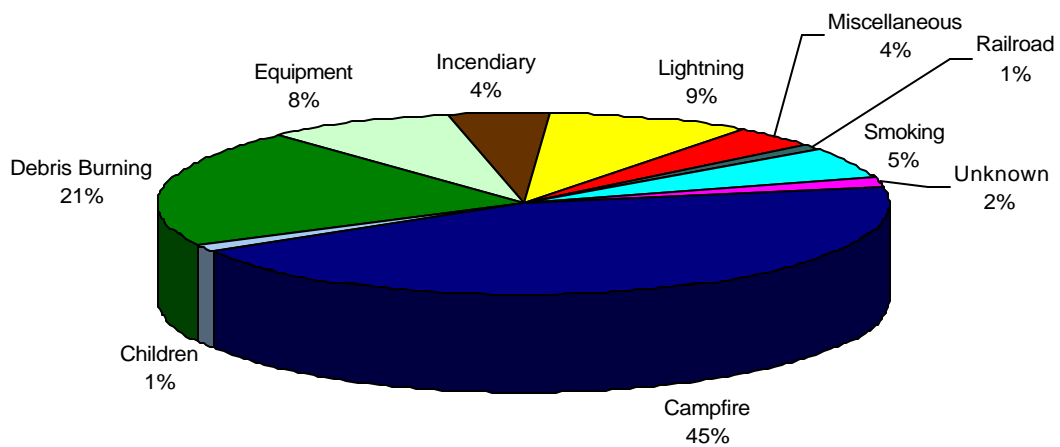


The following charts show percentages for forest fires by cause and acres burned by cause:

FOREST MANAGEMENT DIVISION  
Department of Natural Resources  
Forest Fires by Cause  
Calendar Years 1999 and 2000



FOREST MANAGEMENT DIVISION  
Department of Natural Resources  
Acres Burned by Cause  
Calendar Years 1999 and 2000



**Audit Objective:** To assess the effectiveness and efficiency of FMD's forest resource protection activities.

**Conclusion:** Our assessment disclosed that FMD's forest resource protection activities were generally effective and efficient. However, we noted reportable conditions related to program goals and objectives (Finding 1), fire suppression training, and forest fire suppression costs.

**Noteworthy Accomplishments:** The U.S. Forest Service recognized FMD in 1999 and 2000 for excellent cooperation in supporting the national fire suppression effort. Suppression resources were dispatched to 13 different states. The State of Montana also recognized Michigan's efforts in assisting it in suppressing the fires impacting its forests. FMD sent 82 firefighters and foresters to other states for 1,591 days during fiscal years 1999-2000 and 1998-99 to assist fighting large national forest fires. The U.S. Forest Service reimburses the State for all labor and subsistent costs. FMD recognizes the training value that its employees receive assisting in the suppression of these fires.

## **FINDING**

### **4. Fire Suppression Training**

FMD had not established training policies and procedures that required fire suppression training for those individuals who engaged in fire line suppression activities.

FMD informed us that when a fire is reported to a forest management unit, any forest management unit employee could be assigned to fire suppression activities. Some individuals perform fire line suppression activities, such as operating fire line equipment, while others support fire suppression activities, such as fueling vehicles and operating radio equipment.

Because FMD had not developed and implemented policies and procedures that required training for individuals who engaged in fire line suppression activities, FMD could not ensure that its employees and volunteers assigned to fire line suppression activities were adequately trained to fight forest fires. With untrained individuals, the potential exists that employees are engaging in activities that could result in harm to themselves and others or may not be effective in the suppression of a fire.

FMD is in the process of implementing an internal training program for all fire line suppression activities.

### **RECOMMENDATION**

We recommend that FMD establish training policies and procedures that require fire suppression training for those individuals who engage in fire suppression activities.

### **AGENCY PRELIMINARY RESPONSE**

DNR agrees with the recommendation and informed us that it is the intent of the Forest, Mineral, and Fire Management Division to complete the formalization of the fire suppression training program. The Division has recently approved a new Division policy (Personnel Training and Development - 142) that defines the process for an annual training plan and will be utilized to address this issue.

DNR also informed us that FMD has been a national leader in most aspects of fire suppression activities, including training, and has always ensured that staff who are engaged in specific fire suppression activities have had the appropriate training for the assigned activity. FMD utilized the "Red Book" process for many training exercises. The "Red Book" process is a federal training regime which prescribes that certain activities/learning occur before a certified person "signs off" that the employee has completed the course.

### **FINDING**

#### **5. Forest Fire Suppression Costs**

FMD had not established adequate policies and procedures to ensure that it charged all responsible parties for forest fire suppression costs and that the amounts charged were collected. Also, FMD did not charge all appropriate fire suppression costs to responsible parties.

Section 324.51509 of the *Michigan Compiled Laws* provides for billing for all fire suppression costs when the responsible party is known. During calendar years 1999 and 2000, FMD responded to 1,237 forest fires at a cost of \$1,512,785 for direct labor and equipment.

Our review of FMD's fire reports and billings for 40 of the 1,237 fires disclosed:

- a. Of 24 instances in which the responsible parties were known and were in violation of the fire law, the responsible parties were not billed for 7 (29%) of the fires. The State suppression costs for these fires totaled \$1,745 for labor and equipment.

Forest management units' fire officers informed us that fire officers may not bill for suppression costs when the responsible parties are not ticketed for violation of the fire law. In 3 (43%) of the 7 instances, the responsible parties were ticketed for violating the fire law. Further, the fire officer had not provided a reasonable explanation why the suppression costs were not billed.

- b. FMD was not aware of the total amount billed to the responsible parties or the amount that the responsible parties had paid. The forest fire officers at the forest management units bill the responsible parties and forward copies of the billings to the Forest Resource Protection Section. The responsible parties are instructed to send the payments to DNR's cashier within 60 days of the receipt of the bill. The forest fire supervisors are required to follow up any billings that are not paid. The cashier provides the Forest Resource Protection Section a copy of the receipt that is used to inform the forest management units when the collection is received.

Because the billings were not prenumbered, the Forest Resource Protection Section was unable to determine if it received all the billings from the forest management units.

- c. FMD did not charge the responsible parties for any employees' benefits on the labor charged. The total fire suppression labor costs for calendar years 1999 and 2000 totaled approximately \$623,037.

## **RECOMMENDATIONS**

We recommend that FMD establish adequate policies and procedures to ensure that it charges all responsible parties for forest fire suppression costs.

We also recommend that FMD establish adequate policies and procedures to ensure that it collects fire suppression costs reimbursements.

We further recommend that FMD charge all appropriate fire suppression costs to responsible parties.

### **AGENCY PRELIMINARY RESPONSE**

DNR agrees with the recommendations and informed us that it has a draft policy under review and consideration by the management team (Suppression Cost Collection - 523).

The Forest, Minerals, and Fire Management Division is investigating the feasibility of utilizing the accounts receivable system to ensure that (1) responsible parties have paid their bills and (2) revenues are better tracked. If this proves to be unworkable, the Division will investigate other methods to improve this process.

## **RECREATION AND TRAILS**

### **COMMENT**

**Background:** The State forests are enjoyed by a wide variety of Michiganians and State visitors. Recreational opportunities include camping and day use activities in 143 State forest campgrounds; motorized recreation on the 5,889 miles of snowmobile trails and 2,651 miles of off-road vehicle trails; hiking, cross-country skiing, mountain bicycling, and horseback riding on more than 1,100 miles of nonmotorized trails; and canoeing on the many rivers that form water trails throughout the State forests. The system provides 3.9 million acres, the largest public acreage in Michigan, for recreation activities that do not require special facilities, such as hunting, mushroom and berry picking, nature observation, and access to thousands of miles of fishable rivers and acres of lakes (see summary of forest management units' selected activities and expenditures, presented as supplemental information).

**Audit Objective:** To assess the effectiveness and efficiency of FMD's recreation and trails programs.

**Conclusion:** FMD's recreation and trails programs were generally effective and efficient. However, we noted reportable conditions related to program goals and objectives (Finding 1) and State forest campgrounds.

## **FINDING**

### **6. State Forest Campgrounds**

FMD had not developed an effective system to ensure that State forest campgrounds were routinely inspected.

FMD did not require regular inspections of the State forest campgrounds. Recreation and Trails Section personnel informed us that inspections were performed. However, many of the inspections were not documented. As a result, FMD was not assured that the inspections were consistently conducted on a timely basis.

Without assurance of routine inspections of the State forest campgrounds, FMD did not have reasonable assurance that all campgrounds were maintained in a safe, sanitary, and pleasant condition.

## **RECOMMENDATION**

We recommend that FMD develop an effective system to ensure that State forest campgrounds are routinely inspected.

## **AGENCY PRELIMINARY RESPONSE**

DNR agrees with the recommendation and informed us that the Forest, Mineral, and Fire Management Division will incorporate routine inspections into an existing policy or create a new policy that will require routine documented inspections to ensure a safe, sanitary, and pleasant camping experience for all participants.

DNR also informed us that form R4117 is used at the beginning of the camping season to evaluate campground infrastructure. This information is maintained locally. Routine inspections are done when money is collected or other campground maintenance is performed. The inspections are not routinely documented.

## SUPPLEMENTAL INFORMATION

## Description of Survey

We developed a survey requesting input from timber harvesters regarding their association with the Forest Management Division (FMD).

We mailed this survey to 106 timber harvesters and received 45 (42%) responses. A review of the responses indicated that most respondents were treated fairly by the State during the timber sale bid process; most respondents indicated that the selection of trees was reasonable; most respondents indicated that the size of the State timber sales units was appropriate or very appropriate; and most respondents indicated that they were satisfied or very satisfied with their interaction with FMD officials. However, there were some concerns that foresters were not adequately trained on timber harvester's mechanical equipment used on marked timber sales. Also, there were several responses that indicated that the timber sales were either too small for the large timber harvesters or too large for the small timber harvesters. The total number of responses for each item may not agree with the number of responses reported because some respondents provided more than one response to an item and other respondents did not answer all items. We provided a summary of this information to FMD management.



FOREST MANAGEMENT DIVISION  
Department of Natural Resources (DNR)  
Summary of Survey Responses

Copies of survey distributed	106
Number of responses	45
Response rate	42%

1. During the last three years, have you submitted a bid on a State timber sale contract?

Yes	No
<hr/> 36	<hr/> 9

2. How many State timber sale contracts have you been awarded during the last three years? (If you respond none, please go to Question 4.)

None	1 to 3	4 to 6	7 to 10	More than 10
<hr/> 12	<hr/> 6	<hr/> 6	<hr/> 6	<hr/> 15

3. In what geographic area(s) have you performed timber cuts during the last three years?

Lower Peninsula	Upper Peninsula	Both Peninsulas
<hr/> 24	<hr/> 9	<hr/> 4

4. Were you treated fairly by the State during the timber sale bid process?

Yes	No
<hr/> 39	<hr/> 3

5. If you have been awarded a timber sale contract, in how many of the last 36 months were you harvesting timber on State land? (If you respond zero, please go to Question 7.)

Number of Months
<hr/> 2 - 36

6. During the months you were harvesting State timber (as identified in Question 5), on average how frequently did DNR Forest Management Division officials visit the cut site where you were harvesting timber on State land?

More than Once a Week	Weekly	Biweekly	Monthly	Never	Other
<hr/> 2	<hr/> 14	<hr/> 10	<hr/> 7	<hr/> 1	<hr/>

7. How reasonable is DNR's selection of trees to be cut on State timber sale?

Very Reasonable	Reasonable	Unreasonable	Very Unreasonable	No Opinion
<u>4</u>	<u>30</u>	<u>8</u>	<u>2</u>	<u>3</u>

8. How appropriate has the size of the State timber sales units been in the last three years?

Very Appropriate	Appropriate	Inappropriate	Very Inappropriate	No Opinion
<u>4</u>	<u>24</u>	<u>10</u>	<u>1</u>	<u>4</u>

9. If you responded inappropriate or very inappropriate to Question 8, should the size of the sales units be increased or decreased?

Increased	Decreased
<u>8</u>	<u>4</u>

10. Have you requested an extension to any of your State bid contracts within the last three years?

Yes	No
<u>26</u>	<u>14</u>

11. If you responded "yes" to Question 10, was the extension to your State bid contract approved or denied?

Approved	Denied
<u>26</u>	<u>2</u>

12. If you responded "denied" to Question 11, were you provided with a reasonable explanation?

Yes	No
<u>0</u>	<u>2</u>

13. How satisfied are you with your interaction with officials from the DNR Forest Management Division?

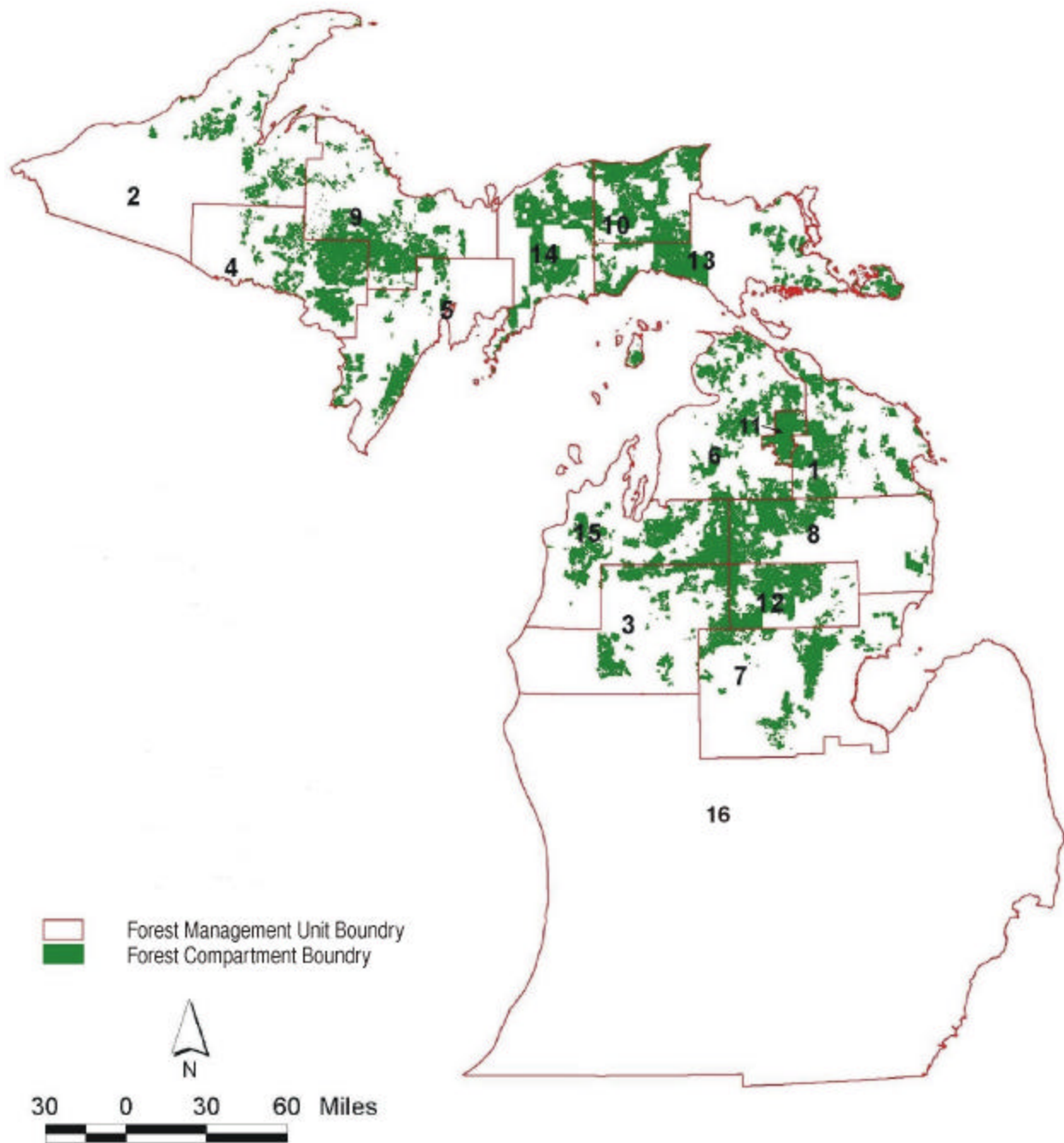
Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	No Opinion
<u>11</u>	<u>25</u>	<u>6</u>	<u>0</u>	<u>2</u>

14. Are there any areas in which the DNR Forest Management Division could improve its operation?

Yes	No
<u>31</u>	<u>8</u>

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FOREST MANAGEMENT DIVISION  
Department of Natural Resources  
State Forest by Management Unit



FOREST MANAGEMENT DIVISION  
Department of Natural Resources  
Summary of Forest Management Units' Selected Activities and Expenditures

Map Code	Forest Management Unit or Operational Unit	Employees as of March 31, 2001	Expenditures as of September 30, 2000	Expenditures as of September 30, 1999	Acres of State Forest	Calendar Year 2000 Forest Fires	Acres Burned
1	Atlanta	12	\$1,006,612	\$917,357	282,677	54	152
2	Baraga	13	1,084,760	1,016,963	141,283	30	1,646
3	Cadillac	16	1,215,299	1,190,236	230,021	53	169
4	Crystal Falls	13	1,060,777	1,057,244	299,599	17	31
5	Escanaba	13	947,576	873,203	141,512	31	99
6	Gaylord	21	1,442,649	1,528,353	316,283	98	235
7	Gladwin	14	1,033,706	933,395	219,981	63	555
8	Grayling	30	1,538,047	1,366,812	277,242	42	375
9	Gwinn	15	1,226,335	1,503,778	284,746	29	30
10	Newberry	10	798,600	776,273	352,879	11	34
11	Pigeon River Country	4	329,614	307,342	103,903	0	0
12	Roscommon	15	1,855,695	1,597,761	273,964	29	320
13	Sault Ste. Marie	12	1,164,554	1,040,204	321,839	12	22
14	Shingleton	17	1,350,686	1,227,244	377,561	6	25
15	Traverse City	16	1,301,742	1,221,057	324,390	47	129
16	Southern Lower Peninsula	15	1,249,095	1,182,540	0	51	818
	Northern Lower Peninsula (2)	19	2,441,471	2,106,532			
	Upper Peninsula (2)	28	2,055,788	2,029,755			
	Lansing Central Office	49	8,660,912	5,156,454			
		<u>332</u>	<u>\$31,763,917</u>	<u>\$27,032,504</u>	<u>3,947,880</u>	<u>573</u>	<u>4,640</u>

(1) The miles of off-road vehicle trails do not include 534 off-road vehicle trail miles that are within the national forest and are monitored by the Forest Management Division.

(2) These operational units' activities are included in the applicable forest management units.

<u>Calendar Year 1999 Forest Fires</u>	<u>Acres Burned</u>	<u>Campgrounds</u>	<u>Campground Sites</u>	<u>Miles of Snowmobile Trails</u>	<u>Miles of Off-Road Vehicle Trails (1)</u>
49	142	13	331	289	303
18	67	5	54	938	79
69	227	15	340	515	408
13	15	5	83	341	122
24	66	1	18	134	79
84	148	10	188	436	309
64	219	4	117	0	128
72	198	17	352	429	143
23	5,734	7	125	293	57
2	13	17	328	251	164
0	0	5	168	0	0
53	293	8	116	267	331
16	917	10	271	582	237
15	42	11	130	466	29
60	170	15	318	323	261
102	929	0	0	625	0
<hr/>					
<u>664</u>	<u>9,180</u>	<u>143</u>	<u>2,939</u>	<u>5,889</u>	<u>2,651</u>

## Glossary of Acronyms and Terms

compartment	Small units of State forests. Forest compartments are generally 1,500 to 3,000 acres, but compartments can vary depending on other physical features, such as cover type, rivers, and roads.
DNR	Department of Natural Resources.
effectiveness	Program success in achieving mission and goals.
efficiency	Achieving the most outputs and outcomes practical for the amount of resources applied or minimizing the amount of resources required to attain a certain level of outputs or outcomes.
FMD	Forest Management Division.
goals	The agency's intended outcomes or impacts for a program to accomplish its mission.
IFMAP System	Integrated Forest Monitoring, Assessment and Prescription System.
mission	The agency's main purpose or the reason that the agency was established.
objectives	Specific outputs that a program seeks to perform and/or inputs that a program seeks to apply in its efforts to achieve its goals.
operations inventory	An inventory system that specifically locates and identifies physical, biological, economic, and social information on each unit of land. It provides information for day-to-day

operations relating to resource management issues, such as timber, wildlife, forest recreation, water quality, reforestation, and land use.

outputs	The products or services produced by the program. The program assumes that producing its outputs will result in favorable program outcomes.
performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
prescription	A planned series of treatments designed to change current stand structure to one that meets management goals.
reportable condition	A matter coming to the auditor's attention that, in the auditor's judgment, should be communicated because it represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.
silvicultural	The care and cultivation of forest.
stand	Subdivisions of State forest compartments. Stands are the smallest recordkeeping unit. They range in size from 10 to 100 acres. Detailed resource information is collected on a stand-by-stand basis.